B.S. IN MOLECULAR LIFE SCIENCES (Developmental and Cellular Biology concentration) — DEGREE REQUIREMENT CHECK SHEET
For students who matriculated summer 2022 through spring 2024

Student Name/ID: _____ Purpose: _____ Date: _____

Credit hours:
Currently enrolled in: _____ semester: _____
Currently enrolled in: _____ semester: _____

AFTER SUCCESSFUL COMPLETION OF CURRENT ENROLLMENT, YOU NEED THE FOLLOWING:

IUB GENERAL EDUCATION REQUIREMENTS:

Foundations:

- ☐ English Composition (minimum grade of C required)
- ☐ Mathematical Modeling (fulfilled by major)

Breadth of Inquiry:

- ☐ Arts & Humanities (A&H)–6 credits; need: _____
- ☐ Social & Historical (S&H)–6 credits; need: _____
- ☐ Natural & Mathematical (N&M)–(fulfilled by major)

World Languages & Cultures:

- ☐ World Language–4th semester proficiency
  OR World Cultures–6 credits
  OR Approved international experience

GenEd residency complete: Yes No If no, you need: _____

TOTAL HOURS REQUIREMENTS:

	Required	Complete	Needed
Major Hours	33		
Total College Hours	100		
Total Credit Hours	120		
300-499 level Hours	36		
IUB COLL Res. after 60 Hours	36		

IPRP (in-progress repeated course): Yes No
If yes, credit hours showing as needed in your AAR may not be accurate. Ask an advisor!

College GPA of at least 2.000 is required. _____

CASE REQUIREMENTS:

- ☐ Public Oral Communication (COLL-P 155)
- ☐ English Composition ☐ Mathematical Modeling (fulfilled by major)
- ☐ Critical Approaches to the Arts and Sciences–must be done at IUB
- ☐ CASE A&H–2 courses; will count 2 GenEd A&H here; need: _____
- ☐ CASE S&H–2 courses; will count 2 GenEd S&H here; need: _____
- ☐ CASE N&M–4 courses; fulfilled by major
- ☐ Intensive Writing (IW)–must be done at IUB inside the College
- ☐ Foreign Language (FL)–3rd semester proficiency
- ☐ CASE Culture Studies: Diversity in U.S. course–must be done at IUB

MOLECULAR LIFE SCIENCES MAJOR REQUIREMENTS:

Major requirements must be completed with a C- or better. ★Addenda Requirements (courses marked with ★ below) must be completed with a C- or better, but they do not count toward major GPA or major hours.

- ☐ 33 major hours: ____ needed
- ☐ 18 major hours at 300-499 level: ____ needed
- ☐ Major GPA and concentration GPA ≥ 2.000.
- ☐ 18 major hours at IUB: ____ needed
- ☐ 14 concentration hours: ____ needed

Major GPA: _____Concentration GPA: _____

MOLECULAR LIFE SCIENCES

- ☐ BIOL-L 112 ☐ BIOL-L 211
- ☐ BIOL-L 323, BIOL-L 324, BIOL-S 211, BIOL-X 325 ("Genome Engineering" topic only), BIOT-T 315, BIOT-X 325, CHEM-X 325, **OR both** CHEM-A 314 **and** CHEM-A 316
- ☐ BIOL-L 312
- ☐ MLS-M 420 *(fall)* ☐ MLS-M 430
- ☐ BIOL-L 311 ☐ BIOL-L 417 *(spring)*
- ☐ BIOL-L 313 **OR** BIOL-L 319 **OR** BIOL-Z 318 **OR** BIOL-X 325 ("Immune Response" topic) **OR** PSY-P 473
- ☐ Two Elective lectures (see reverse for list):
  - ☐ _____
  - ☐ _____

CHEMISTRY

- ☐ ★ CHEM-C 117 **and** CHEM-C 127 lab (or CHEM-C 117 **and** CHEM-X 150 lab)
- ☐ ★ CHEM-C 341
- ☐ ★ CHEM-C 342
- ☐ ★ CHEM-C 343 **OR** CHEM-X 325
- ☐ **Biological Chemistry:** CHEM-C 383 **OR** CHEM-C 483 **OR** CHEM-C 484

★ PHYSICS

- ☐ PHYS-P 201 **OR** PHYS-P 221
- ☐ PHYS-P 202 **OR** PHYS-P 222

★ STATISTICS

- ☐ ANTH-A 306, ECON-E 370, POLS-Y 395, PSY-K 300, PSY-K 310, SOC-S 371, STAT-K 310, STAT-S 300, STAT-S 301, **OR** STAT-S 303

★ MATH

- ☐ MATH-M 120 **OR** MATH-M 211 **OR** MATH-M 212

Molecular Life Sciences B.S. degree with concentration in Developmental and Cellular Biology

Student pursuing the Concentration in Developmental and Cellular Biology explore topics in cell biology, developmental biology, genetics, and molecular biology. The course sequence offers both introductory and advanced level courses in each of these disciplines. Students will learn how individual cells function, how they interact with their neighbors, and how a single cell grows and develops into a fully functional adult.

The concentration requires at least 14 credit hours, including the requirements listed below.

Both of the following courses:

- BIOL-L 311 Genetics (3 cr., P: BIOL-L 211) *(fall, spring, and summer)*
- BIOL-L 417 Developmental Biology and Stem Cells (3 cr., P: BIOL-L 311) *(spring)*

One (1) course from the Laboratory list:

- BIOL-L 313 Cell Biology Laboratory (3 cr., P: BIOL-L 113; and one of BIOL-L 211 or CHEM-C 342) *(fall and spring)*
- BIOL-L 319 Genetics Laboratory (3 cr., P: BIOL-L 211; P or C: BIOL-L 311) *(fall and spring)*
- BIOL-X 325 ASURE Biology Research Lab 2 **(approved topic: "Immune Response and Behavior"**) (3 cr.) *(fall or spring, depending on your cohort)*
- BIOL-Z 318 Developmental Biology Laboratory (2 cr., P: BIOL-L 311; P or C: BIOL-L 417) *(rarely offered)*
- PSY-P 473 Lab in Molecular Neuroscience (4 cr., P: PSY-P 326 or PSY-P 346) *(fall and spring)*

Two (2) courses from the Electives list:

- BIOL-L 388 Digital Biology: Topics in Bioinformatics and Genomics (3 cr., P: BIOL-L 211 or instructor consent) [**or** MLS-M 388] *(spring)*
- BIOL-L 485 Genetics, Models of Human Disease, and Critical Analysis of Biological Research (3 cr., P: BIOL-L 311) *(fall)*
- BIOL-L 486 Advanced Cell Biology (3 cr., P: BIOL-L 312) *(spring)*
- BIOL-L 487 Molecular Mechanisms of Development and Disease (3 cr., P: BIOL-L 417) *(rarely offered)*
- MLS-M 388 Digital Biology: Topics in Bioinformatics and Functional Genomics (3 cr., P: BIOL-L 211 or instructor consent) [**or** BIOL-L 388] *(spring)*
- MLS-M 440 Membranes and Signal Transduction (3 cr., P: BIOL-L 211) *(spring)*
- MLS-M 450 Molecular Mechanisms of Cancer (3 cr., P: BIOL-L 211) *(fall)*
- PSY-P 410 Development of the Brain and Behavior (3 cr., P: PSY-P 326 or PSY-P 346) *(spring)*
- PSY-P 457 Topics in Psychology (**approved topic: "Development and Maintenance of Brain Circuits")** (variable credit hours and prerequisites; see Schedule of Classes)
- PSY-P 466 Molecular and Cellular Neurobiology (3 cr., P: PSY-P 326 or PSY-P 346) *(usually fall)*
- PSY-P 470 Molecular Methods in Neuroscience Research (3 cr., P: PSY-P 326 or PSY-P 346) *(spring)*

Notes

- For this concentration, it is wise to take BIOL-L 311 *Genetics* (P: BIOL-L 211) relatively early.
- Except for the GPA requirement, a grade of C- or higher is required for a course to count toward a requirement in the concentration.
- A GPA of at least 2.000 for all courses taken in the concentration—including those where a grade lower than C- is earned—is required.
- Most courses have prerequisites. Always check the Bulletin and the Schedule of Classes for course information before taking a course.